OMV Austria Upstream Visit

Reinhard Oswald
SVP, Managing Director OMV Austria E&P

Vienna, Austria
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OMV has been producing oil and gas in Austria for more than 60 years in a profitable and sustainable way.

**OMV historic production**

- **1949** Discovery of oil field Matzen
- **1955** Record production 81 kboe/d
- **1956** Renationalization, foundation of ÖMV Österreichische Mineralölverwaltung
- **1966** Discovery of gas field Schönkirchen
- **1974** Development of Europe’s first underground gas storage
- **1982** Discovery of gas field Höflein
- **1996** Redevelopment of oil field Matzen
- **2003** Largest oil discovery in Austria in 25 years in the Vienna basin (4.5 mn boe resources)
- **2008** Discovery of gas field Ebenthal
- **2010** Highest production since 1980 (42 kboe/d)
- **2018** New discovery of oil Vienna basin
- **2018** Biggest onshore 3D seismic campaign in OMV history

**Production**

- 1940s
- 1950s
- 1960s
- 1970s
- 1980s
- 1990s
- 2000s
- 2010s

**Key Events**

- 1955: Record production 81 kboe/d
- 1956: Renationalization, foundation of ÖMV Österreichische Mineralölverwaltung
- 1966: Discovery of gas field Schönkirchen
- 1974: Development of Europe’s first underground gas storage
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- 2018: Biggest onshore 3D seismic campaign in OMV history
Our production takes place in Austria’s largest wine growing region using highest environmental standards.

OMV Operator

Wells ~1,000

Wineries ~1,600
OMV Austria Upstream activities today

**Assets**
- 100% owned and operated by OMV
- ~1,000 active wells
- Very cost competitive in mature fields
- Best-in-class oil recovery rates
  - Average Austria ~40%
  - Selected fields > 60%
- Reliable and modern infrastructure e.g.
  - Over 80% automated wells
  - Digital well and pipeline control
  - Fully automated and remotely controlled gas storages and processing plants
  - State-of-the-art water treatment facility
- Fully integrated with Downstream Oil and Gas operations via pipeline

**Reserves and production**
- 2018 production of 26 kboe/d (9 mn boe)
  - 45% oil and condensate
  - 55% natural gas
- 1P reserves of 70 mn boe as of December 31, 2018
- Reserve life of ~ 8 years

**Center of technological excellence**
- for all countries in OMV Upstream
- Stable and material cash generation
HSSE in OMV Upstream – Safety is our top priority and our mandate to operate

Personnel safety record in OMV Upstream
Lost-Time Injury Rate per mn hours worked

OMV Group process safety events
Tier 1

<table>
<thead>
<tr>
<th>Year</th>
<th>OMV Upstream LTIR</th>
<th>IOGP benchmark ¹</th>
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<tr>
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<td>2018</td>
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<table>
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<th>Year</th>
<th>OMV Group process safety events</th>
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<td>2017</td>
<td>4</td>
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<td>2018</td>
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¹ International Association of Oil and Gas Producers
The journey of oil: from reservoir to Schwechat refinery

**Oil well**
- 640 wells
- Raw crude produced from individual production wells is diverted to pipelines and transported to gathering stations

**Gathering station**
- 34 stations
- The individual well streams are brought into the main production facilities through a network of gathering pipelines

**Metering station**
- 29 stations
- Measure the actual flow of oil and gas

**Processing plant**
- 4 plants
- Separate natural gas and salt water from crude oil

**Salt water treatment plant**
- 1 plant
- Remove oil and solids from the salt water
- The treated salt water is further used for “water flooding” of production wells, maintaining reservoir pressure and increasing oil recovery volumes
The journey of gas: from reservoir to customer

Gas well -> Sour gas well -> Gas plant (2 plants) -> Desulphurization plant (1 plant) -> Compressor station (11 stations)

- Gas well
- Sour gas well
- Gas plant: Clean raw natural gas to meet the quality standards of dry natural gas
- Desulphurization plant: Removing sulphur and CO₂
- Compressor station: Dehydration & compression
Storing gas in depleted reservoirs is one of the most efficient, eco-friendly and safe ways

Natural gas storage

- Two natural underground gas storage facilities, with a capacity of ~2.2 bn m³ ~ 25% of yearly Austrian gas consumption
- Gas is fed into the reservoirs and withdrawn from them via wells when needed
- Used to balance seasonal consumption swings

Natural Gas supply  | Natural gas consumption

Injection in summer  | Withdrawal in winter

- 1400 m
- Grain size of pores 0.1 - 2 mm
OMV Upstream Austria strategy: maximize profitable recovery and sustain value generation

Operational excellence
- Efficient workover and asset maintenance
- Infill drilling and selected field re-developments
- Deep and horizontal drilling in complex geology
- Continuous reservoir management and production optimization
- Strict cost management
- Further automation of the production facilities

Maximize recovery factors
- From mature fields through enhanced oil recovery methods

Further exploration opportunities
- Further resources potential through enhanced oil recovery
- Ongoing exploration wells (2 in 2019, 2 in 2020)
- 3D seismic campaign, surveying 1,600 km² completed in March 2019
The exploration of the Vienna mature basin has given OMV special technological expertise in high recovery rates.

- **Primary Recovery**: Natural reservoir pressure, pumps
- **Secondary Recovery**: Increasing reservoir pressure by injection of salt water or gas (IOR)
- **Tertiary Recovery**: Improving liquids viscosity (EOR)

*Average share of oil/water:
Typical ultimate recovery rate:

<table>
<thead>
<tr>
<th>Recovery Type</th>
<th>Share of Oil/Water</th>
<th>Recovery Rate</th>
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<tr>
<td>Primary</td>
<td>~20% – 25%</td>
<td>~20%</td>
</tr>
<tr>
<td>Secondary</td>
<td>~25% – 40%</td>
<td>~25% – 45%</td>
</tr>
<tr>
<td>Tertiary</td>
<td>~30% – 50%</td>
<td>~30% – 60%</td>
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OMV Austria oil recovery rates of ~40% on average and >60% in selected fields.
24 million boe of oil recovered through enhanced recovery methods in last 10 years

Austrian oil production
million boe

Stable and cost competitive production costs
1
mn EUR

1 Disclosure according to US GAAP in OMV Annual Report
Ongoing seismic campaign in Austria: searching for remaining gas resources

- Biggest land seismic ever acquired in Europe
- Acquisition area: 1,600 km², mostly in densely populated area around Vienna
- Deep target: 3,000 - 6,000m
- Potential gas reserves of up to 100 mnboe
- OMV is deploying cable-less seismic equipment together with high efficient source technology (4 vibrator fleets with each 3 vehicles, 700,000 geophones simultaneously operating) making these operations very fast and extremely cost efficient
- Acquisition successfully finished end of March 2019 with no HSSE incidents and a very good acceptance by the public
Tankfarm Auersthal

Today’s visit

- Oil Processing plant 5,500 boe/d
- 4 tanks with 8,000 m³ volume
- 2 oil qualities
- Salt water treatment 18,000 m³/d

Salt water treatment plant

- Essential for operations in mature fields
- 93% of production is salt water
- Salt water cleaned from 300 to 2 ppm oil
- Collecting the average production of an oil well (~ 54 b/d)
- Plant availability: 99.9%
The energy for a better life.